Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

W. R. Grace & Co. – Conn. –Davison Catalysts
Lake Charles Facility
Sulphur, Calcasieu Parish, Louisiana
Agency Interest Number: 1251
Activity Number: PER20060005
Proposed Permit Number: 0520-00001-V9

I. APPLICANT

Company:
W.R. Grace & Co.-Conn. – Davison Catalysts
P.O. Box 3247, Lake Charles, LA 70602

Facility:
Lake Charles Facility
1800 Davison Road, Sulphur, Calcasieu Parish, Louisiana
Approximate UTM coordinates are 467.00 kilometers East and 3336.00 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Grace Davison, a division of W. R. Grace & Co. - Conn. (Grace), owns and operates a petroleum catalysts manufacturing facility under Part 70 Permit 0520-00001-V8 issued September 11, 2005 and PSD Permit PSD-LA-610 issued April 3, 1997.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application was submitted on July 21, 2006 requesting to renew/modify the Part 70 operating permit. Additional information dated December 21, 2006, January 26, 2007 and February 14, 2007 was also received.

Project

With this renewal, the following modifications are proposed:

- Include the emergency emissions in the permit.

- Upgrade the dust collection devices for emission points EQT074 (4-87), EQT089 (5-87), EQT102 (6-87), EQT107 (7-87), EQT110 (8-87) and EQT116 (9-87), by replacing the existing cartridge filters with baghouses. The air flow is increasing due to a larger fan on each baghouse.
- Replace calciner and burners for EQT044 (2-91)
- Rebuild the Silicate Furnace for emission point EQT105 (7-73).
- Delete emission point 13-90.
- Update the following emission points with latest information.
  Tank: EQT012 (1-03).
  Vents: EQT038 (19-90) and EQT061 (3-79).
  Boilers: EQT014 (1-76), EQT022 (1-96), EQT041 (2-76), EQT060 (3-76), and EQT065 (3-94).
  Stack: EQT045 (2-93), EQT055 (28-90) and EQT058 (3-02).
  Scrubbers: EQT029 (11-90) and EQT104 (6-93).
  Absorber: EQT044 (2-91), EQT021 (1-93) and EQT112 (8-93).
  Dust control devices: EQT024 (1-99), EQT086 (48-90), EQT087 (49-90), EQT093 (50-90), EQT094 (51-90), EQT095 (52-90), EQT096 (53-90), EQT097 (54-90), EQT098 (55-90), EQT101 (6-83) and EQT100 (6-01).

The following existing sources that were not permitted before are added into this permit:

- EQT121 (1-06) 8283 Z-14 Calciner No. 1 Emergency Vent
- EQT122 (2-06) 8283A Z-14 Calciner No. 2 Emergency Vent
- EQT117 (3-06) 2071 Super D Cooling Tower
- EQT118 (4-06) 2055 Silicate Cooling Tower
- EQT119 (5-06) 2183 Air Compressor Cooling Tower
- EQT120 (6-06) 2774 HPC Cooling Tower

Proposed Permit

Permit 0520-00001-V9 will be the renewal/modification of Part 70 operating permit 0520-00001-V8 for the W R Grace & Co - Conn - Davison Div Lake Charles Facility.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	529.95	532.98	+3.03
SO_2	0.28	1.20	+0.92
NO_X	798.14	799.41	+1.27
CO	328.45	329.64	+1.19
VOC	10.02	10.05	+0.03

LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
NH_3	190.55	224.55	+34.00
Cl_2	1.44	1.44	-
Co compounds	0.33	0.33	-
Hydrazine	0.01	0.01	-
HCl	82.90	83.40	+0.50
Ni compounds	0.52	0.52	-
HNO_3	0.01	0.01	-
Zn compounds	0.09	0.09	-
Total	275.85	310.35	+34.50

The ammonia emission and other emission increases are mostly due to the inclusion of the emergency stack emissions that were not included in the previous permit.

IV REGULATORY ANALYSIS

This permit was reviewed for compliance with the Louisiana Part 70 operating permit program, Louisiana Air Quality Regulations, New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP). Prevention of Significant Deterioration (PSD) does not apply.

Applicability and Exemptions of Selected Subject Items

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit, or Table 2 of the Air Permit Briefing Sheet.

Prevention of Significant Deterioration/Nonattainment Review

The project emission increases are less than the threshold values for major modification. Netting and PSD analyses are not required.

Streamlined Equipment Leak Monitoring Program

Not Applicable

MACT Requirements

Ni and Ni components are defined as Class I air toxic per LAC 33:III.5102. Nickel used in the hydroprocessing catalysts production process is impregnated on the catalyst. Since the nickel is impregnated on the catalyst, control of catalyst dust results in control of nickel emissions. Emissions of Ni and Ni components shall be controlled by the baghouses (EQT026, EQT077 and EQT113) to 99.9% efficiency. These baghouses shall be maintained and operated properly and all the emission vents shall be inspected for visible emissions on a daily basis. The filter elements (bags) shall be inspected every six months or whenever visual checks indicate maintenance may be necessary. The filter elements shall be changed as necessary. Records of visual checks and maintenance inspections of the dust filters shall be kept on site and available for inspection by the Office of Environmental Compliance, Surveillance Division, Louisiana DEQ.

NSPS Subpart UUU Non-applicability

Although the Lake Charles Facility uses mineral products as raw materials for catalyst production, this facility does not process any minerals in its driers or calciners. The kaolin clay used in the Lake Charles Facility is processed in W. R. Grace's South Carolina Plant prior to being received in the Lake Charles Facility. In the Lake Charles Facility, the clay is simply mixed with other chemicals and reacts to form catalysts - prior to the catalyst being sent to driers and/or calciners. The catalysts are no longer "minerals" (or do not contain any minerals any more) since after the reactions the "naturally-occurring" substance forms (chemical compositions) in the original minerals have been lost (changed). The definition of "mineral processing" is silent with respect to the resultant product of the mixture of various substances with minerals which have reacted to form a new substance, in this case the catalyst. Since the catalyst is not a "mineral" by definition, the percentage of "minerals" in the catalyst production processes as raw materials is not needed to determine applicability. The aluminum and other metal products used in the Lake Charles Facility are in solution form and are not "minerals" by definition. Since the Lake Charles Facility does not process any minerals, it is not subject to the requirements of 40 CFR Part 60, Subpart UUU.

Air Quality Analysis

Not Applicable

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

No permit shield was requested by the facility.

VI. PERIODIC MONITORING

The monitoring, reporting, and recordkeeping necessary to demonstrate compliance with the applicable term, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of

Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.